



**PIR**

**PHOTOGRAPHIC INTELLIGENCE REPORT**

**SEISMIC EVENT OF 30 SEPTEMBER 1966**

**NEAR KARSHI, USSR**

DECLASS REVIEW by NIMA/DOD

CIA/PIR 75119

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## SEISMIC EVENT OF 30 SEPTEMBER 1966

### NEAR KARSHI, USSR

#### SUMMARY

Analysis of pre- and post-event photography of the epicentral area of the 30 September 1966 seismic event near Karshi, USSR, indicates that the event was an underground nuclear explosion used to extinguish a large gas well fire. A review of all photographic coverage of the area established that the well burned from at least [ ] It was not burning on [ ] 19 days after the seismic event. This timely disappearance of the fire strongly suggests a relationship with the seismic event.

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The conclusion that nuclear explosives were used is supported by the absence of high explosives (HE) storage areas and the absence of mining-type operations which would be required for emplacing large quantities of HE underground. In addition, the justification for the use of nuclear explosives is indicated in open-source Soviet literature which stated that the Soviet Union was sustaining tremendous monetary losses from the fire which were an "enormous detriment to the national economy".

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FIGURE 1. LOCATION OF THE 30 SEPTEMBER 1966 SEISMIC EVENT.

## INTRODUCTION

A study of the epicentral area of a reported seismic disturbance, which occurred on 30 September 1966, was conducted in an effort to identify the cause of the event. The epicenter of this event, as reported by the United States Atomic Energy Detection System (USAEDS), was located in the Sundukli Desert region of the Soviet Union at 38-58N 064-34E, approximately 48 nautical miles (nm) south of Bukhara and 55 nm west of Karshi (Figure 1). The area studied included, but was not limited to, all of the area within the stated error ellipse for this event: semi-major axis of 14 kilometers (km) oriented north-south and semi-minor axis of 11 km. The USAEDS also reports that analysis of the seismic data suggests the event was a large possible underground explosion with an estimated yield in the low kiloton range (less than 20).

During this study, particular emphasis was placed on attempting to locate and identify any activity which might confirm or negate this analysis and might also indicate whether high explosives (HE) or nuclear explosives were used. All pre- and post-event coverage of the area was examined in order to provide a chronology (Table 1) of the extensive drilling activity which was identified just north of the epicenter. The alphabetic designations of the drilling points were arbitrarily assigned by the imagery analyst. The distances of the drill rigs from the well fire as well as the distances of the secured vans/trailers from the drill rigs are given in Table 2. Tables 1 and 2 are attached to Figure 11 so that they may be used in conjunction with other graphics in this report.

Measurements: All measurements in this report were made by the IAS imagery analyst based on photography from

## DISCUSSION

Extensive petroleum exploration drilling activity was identified in a 25 square nm area just north of the reported epicenter (Figure 8). Of particular interest on pre-event photography was a large gas well fire located at 38-58N 064-31E, 2 nm west of the epicenter (Figure 4). This well fire was first observed on photography of (Figures 4 and 5) and was still burning as late as six days before the event (Inset, Figure 6). However, on post-event coverage of 19 days after the event, the fire was out (Figures 8 and 9). A secured group of five vans/trailers located north of the fire was seen for the first time on this same photography (Inset, Figure 8).

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The absence of the well fire, which burned for over two years, and the appearance of the secured vans/trailers were the only significant changes noted in the area between the pre- and post-event photography. No surface evidence of an earthquake or explosion could be identified anywhere in the epicentral area. No HE storage areas were found, and evidence of a mining operation, which would be required for emplacing large quantities of HE underground, was also lacking. The association of the secured vans/trailers with the extinguishing of the fire is certainly implied by their timely appearance and disappearance. However, the exact function of these vans/trailers is not clear. Possible functions could include temporary storage of sensitive or explosive items, mobile instrumentation or even temporary housing for high-level personnel. Cables or cable trench scars, which might indicate an instrumentation function, were not visible between the vans/trailers and the drill rigs.

A possible graded-earth landing strip (Figure 6) at the site first appeared on [redacted] photography and was apparently constructed in conjunction with the early attempts to extinguish the well fire.

A Soviet open-source publication of January 1965, reporting a gas well blow-out and subsequent fire which occurred at Well No. 11 of the Urta-Bulak deposit on 1 December 1963, probably is referring to the well fire observed near the 30 September 1966 seismic event. 1/ Soviet geological maps locate the Urta-Bulak deposit in the same location as the drilling activity and fire. Well No. 11, according to the article, had an initial flow rate of 13 million cubic meters of gas per day, making it the largest in the history of petroleum exploration activity in the Soviet Union. 1/ Initial unsuccessful attempts to extinguish the fire in the first seven months cost the Soviets nearly one million rubles, and additional measures envisioned at the time required the allocation of another 1.8 million rubles. 1/ The article goes on to describe the sequence of events leading up to the blow-out and also states that because of the "enormous detriment to the national economy", the State Geological Committee of the USSR has directed that its rapid elimination should be the most important task of the Main Administration of Geology and Conservation of Deposits, Uzbek SSR.

The fact that the well continued to burn for over two years after this time suggests that they were sustaining monetary losses so large that extreme measures were warranted to put out the fire.

The occurrence of the 30 September 1966 seismic event so near the well fire, the extinguishing of the fire at about this same time, the timely appearance and disappearance of the secured vans/trailers, and the lack of evidence which might indicate an HE explosion or earthquake in the epicentral area all combine to indicate that a nuclear device was exploded underground to close off the flow of gas and extinguish the fire.

#### APPENDIX: DETAILED CHRONOLOGY

The first photographic coverage of the epicentral area, dated [redacted] revealed unidentified activity at two points later identified as drilling points A and B (Figure 2). Coverage of [redacted] facilitated the identification of possible drill rigs at points A, B and C. Unidentified activity was again observed at these three points on [redacted]. The presence of drill rigs at points A, B and C was confirmed by good quality KH-4 photography [redacted] (Figure 2).

In addition to the rigs at points A, B and C, a rig was observed at point D (site of the subsequent well fire) for the first time on [redacted] (Figure 3). The point D rig was probably still present, along with unidentified activity at points A, B and C on photography dated [redacted].

Photography of [redacted] revealed a large gas fire at Well D (Figures 4 and 5). Rigs were visible at points A and B, and three additional points designated E, F and G (Figure 4). The rig at point C had been removed. A new, possible graded-earth landing strip approximately 1,200 feet long was seen near point A (Figure 4). This possible landing strip was extended to 2,000 feet some time before the next photographic coverage of [redacted]. A circular dike had also been built up around the well during the same time period (Figure 7).

Eleven additional drilling points were observed in the area on subsequent missions through [redacted] (Table 1). At that time, drill rigs were located at the 15 points indicated in Figure 6 and points A and C had been abandoned.

The well fire was observed as late as [redacted] six days prior to the seismic event (Inset, Figure 6). The small scale of the [redacted] index camera photography, however, precludes the identification or interpretation of any other activity in the area.

Post-event coverage of [redacted] revealed that the well fire had been extinguished sometime during the previous 25 days (Figures 8 and 9) and that drill rigs were located at the same points as on [redacted] (Figure 8). A group of 15 vans/trailers was observed for the first time on the [redacted] coverage approximately 15,400 feet north of the fire site (Figure 8). Five of these vans/trailers were lined up in a row and were apparently secured by a fence (Inset, Figure 8). Small guard shacks were located at opposite corners of the fenced area also.

The small support area serving the drilling operation consists mainly of open storage areas and a large water reservoir. Two small buildings located here probably serve an administration/support function.

The most recent large-scale coverage of the area, dated [redacted] reveals that the drill rigs at points H, M, and P have been removed and that the group of vans/trailers are no longer present (Figures 10 and 11). No additional drilling points were observed in the area on this photography.

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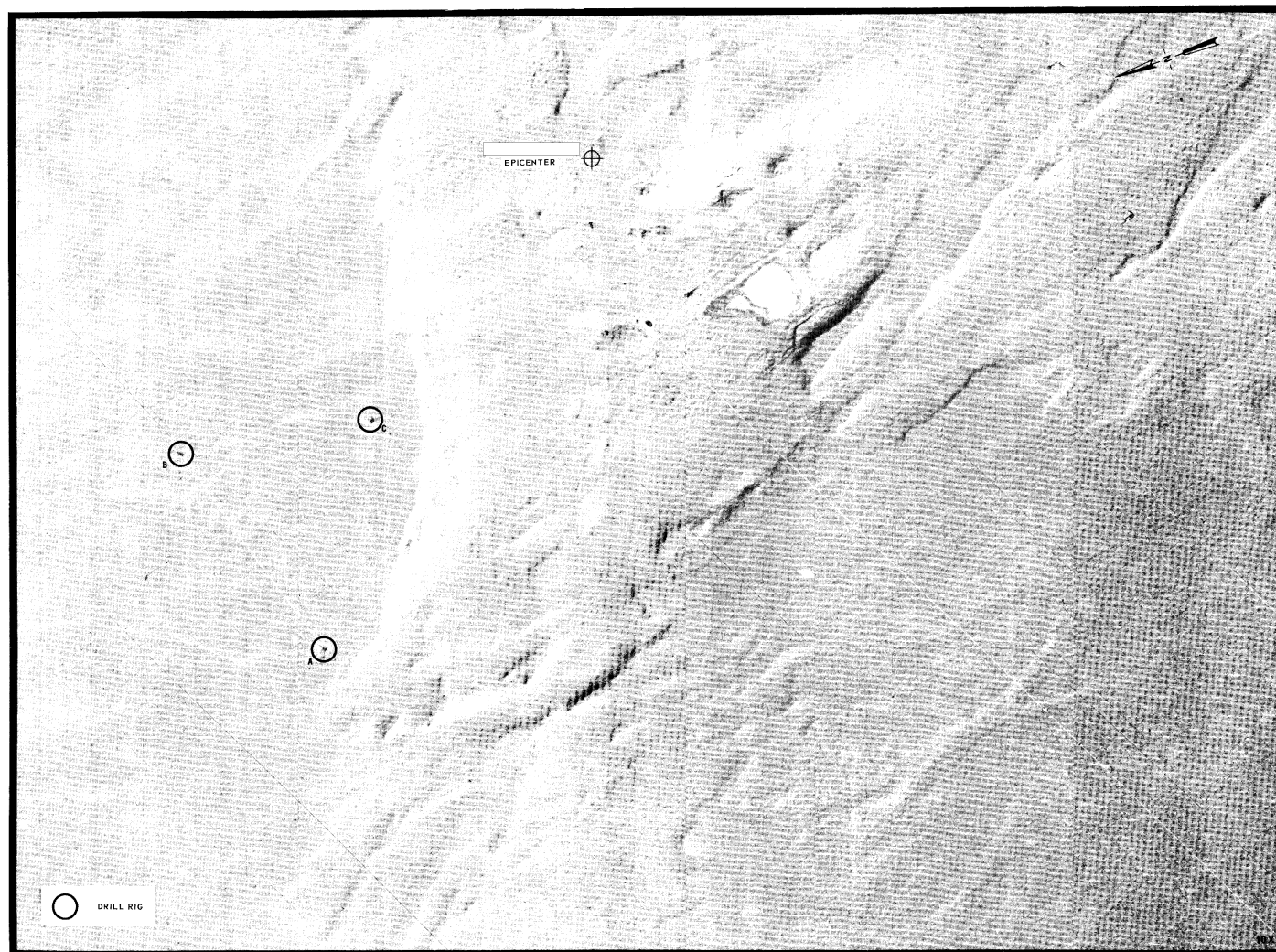


FIGURE 2. EARLY DRILLING ACTIVITY NEAR THE REPORTED SEISMIC EVENT

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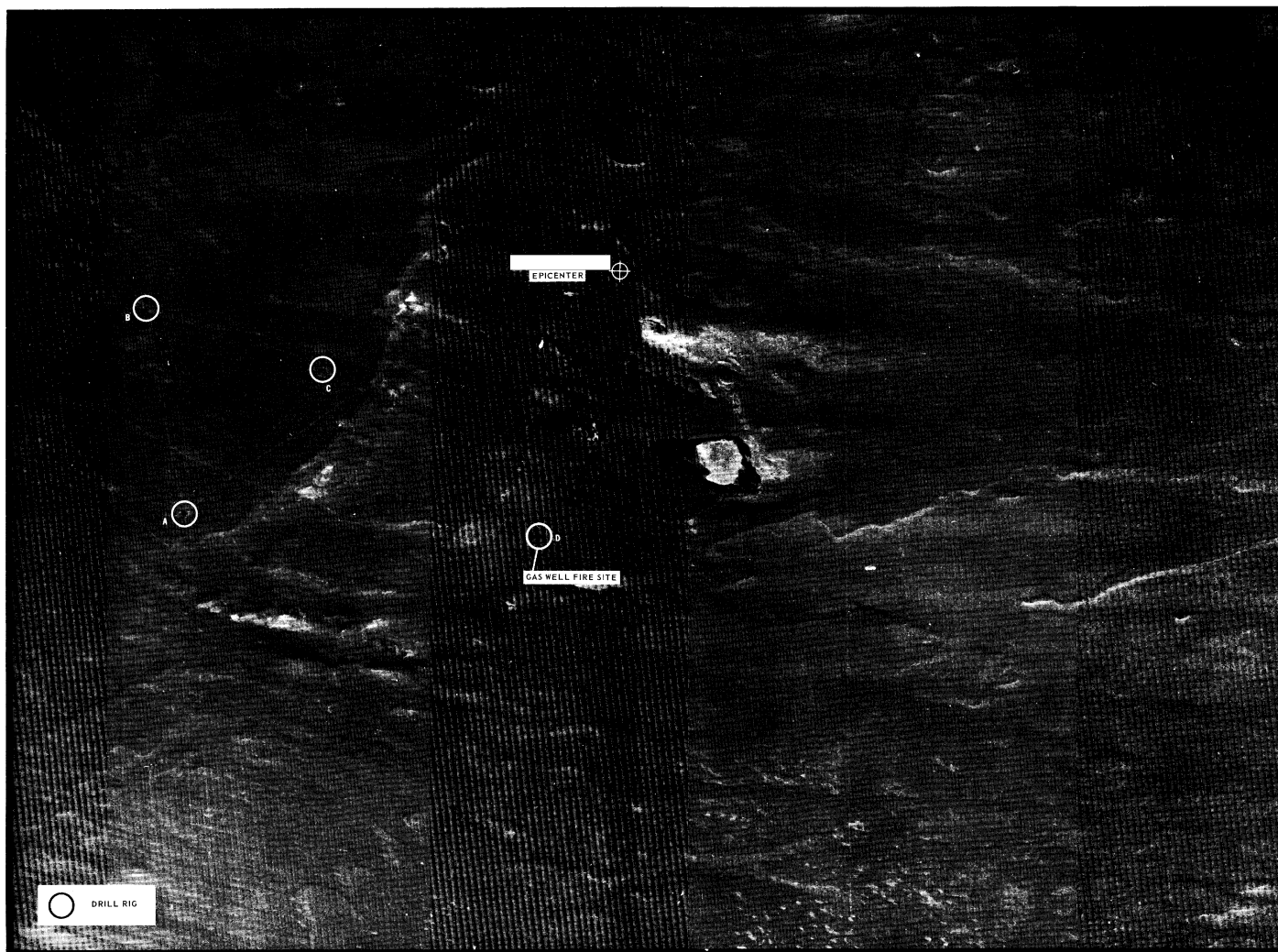


FIGURE 3. DRILL RIG AT THE SITE OF THE GAS WELL FIRE

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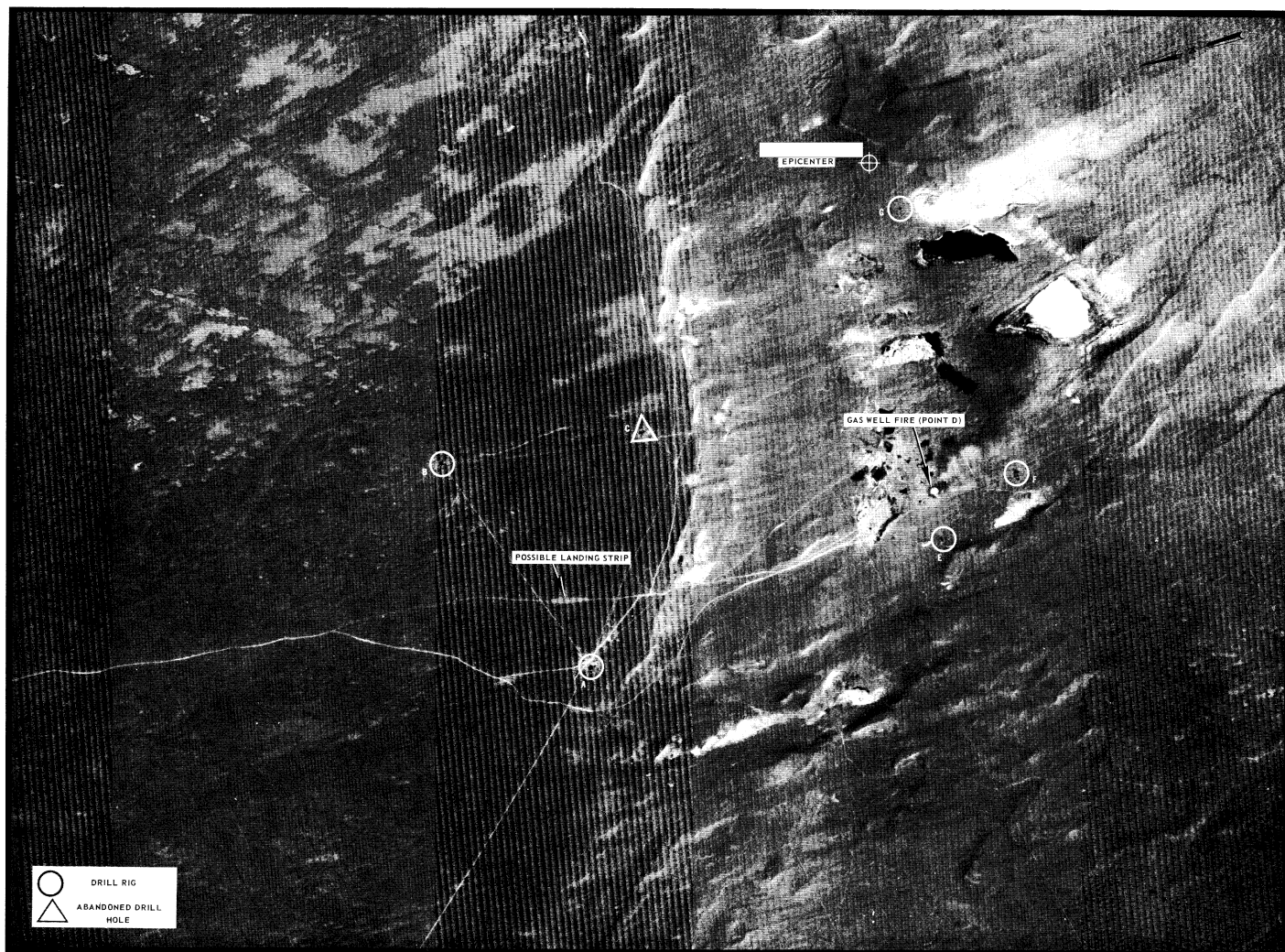
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FIGURE 4. GAS WELL FIRE NEAR THE REPORTED SEISMIC EVENT

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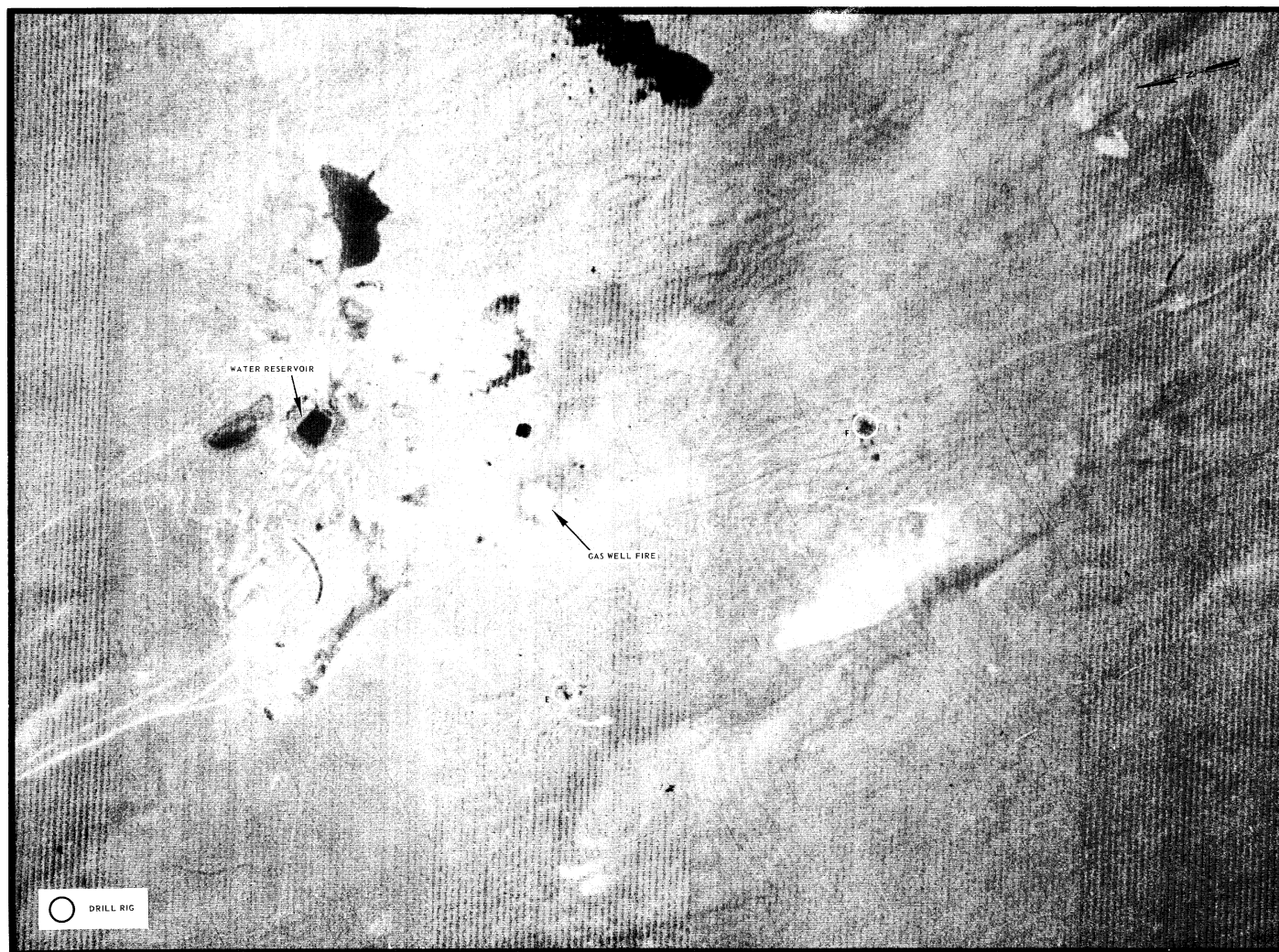


FIGURE 5. IMMEDIATE VICINITY OF THE GAS WELL FIRE

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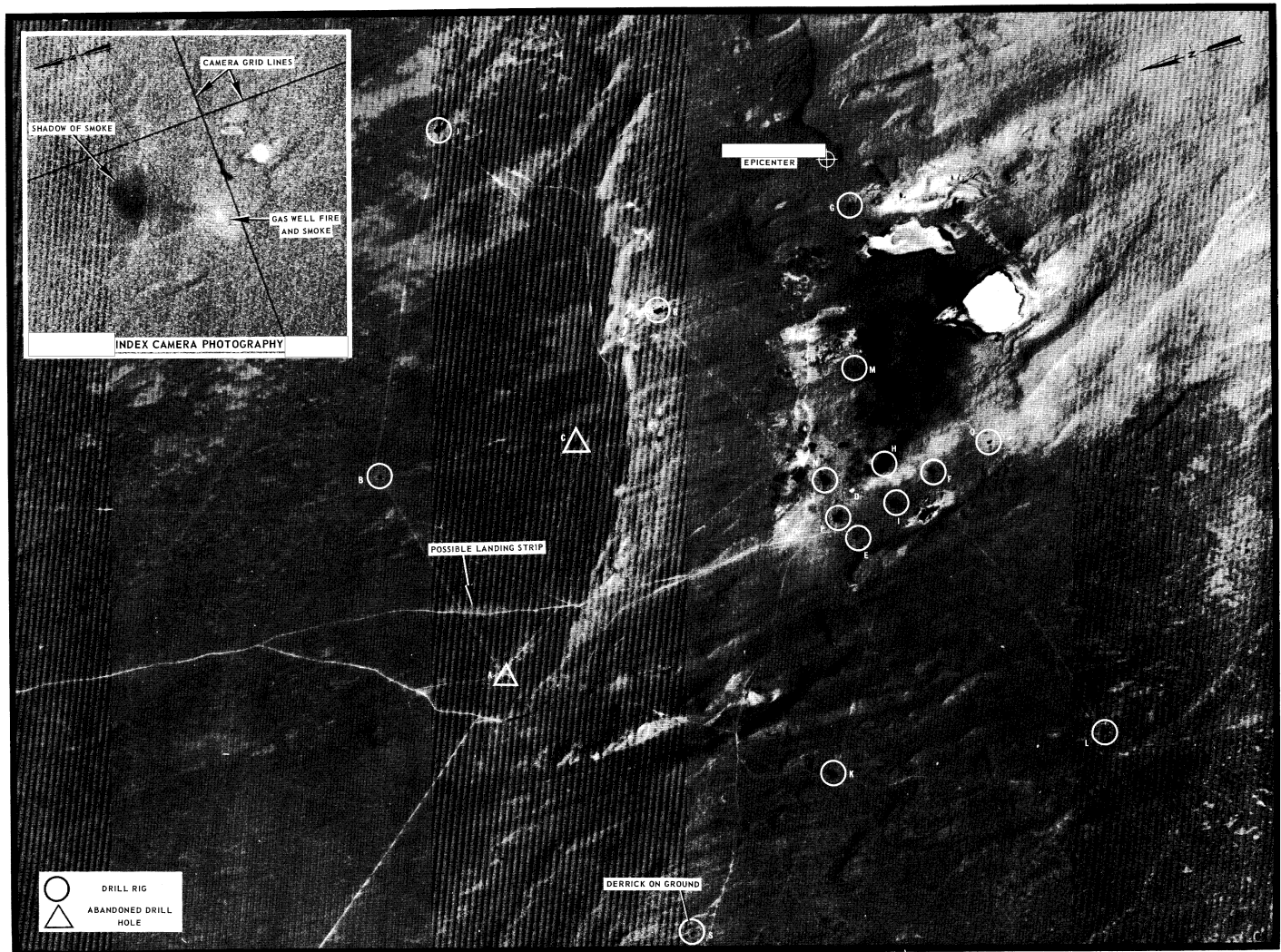
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FIGURE 6. GAS WELL FIRE AND DRILLING ACTIVITY NEAR THE REPORTED SEISMIC EVENT

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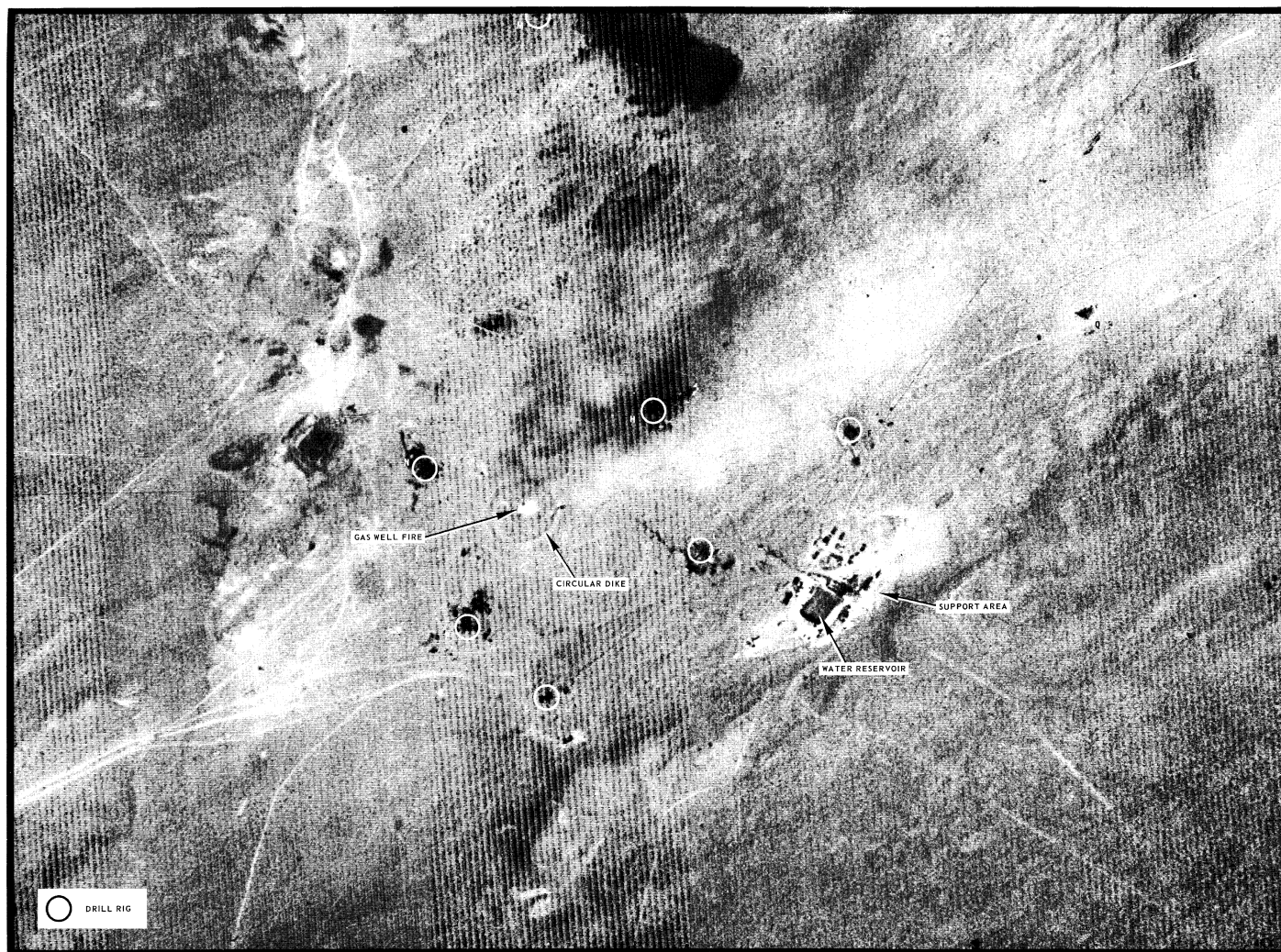


FIGURE 7. IMMEDIATE VICINITY OF THE GAS WELL FIRE

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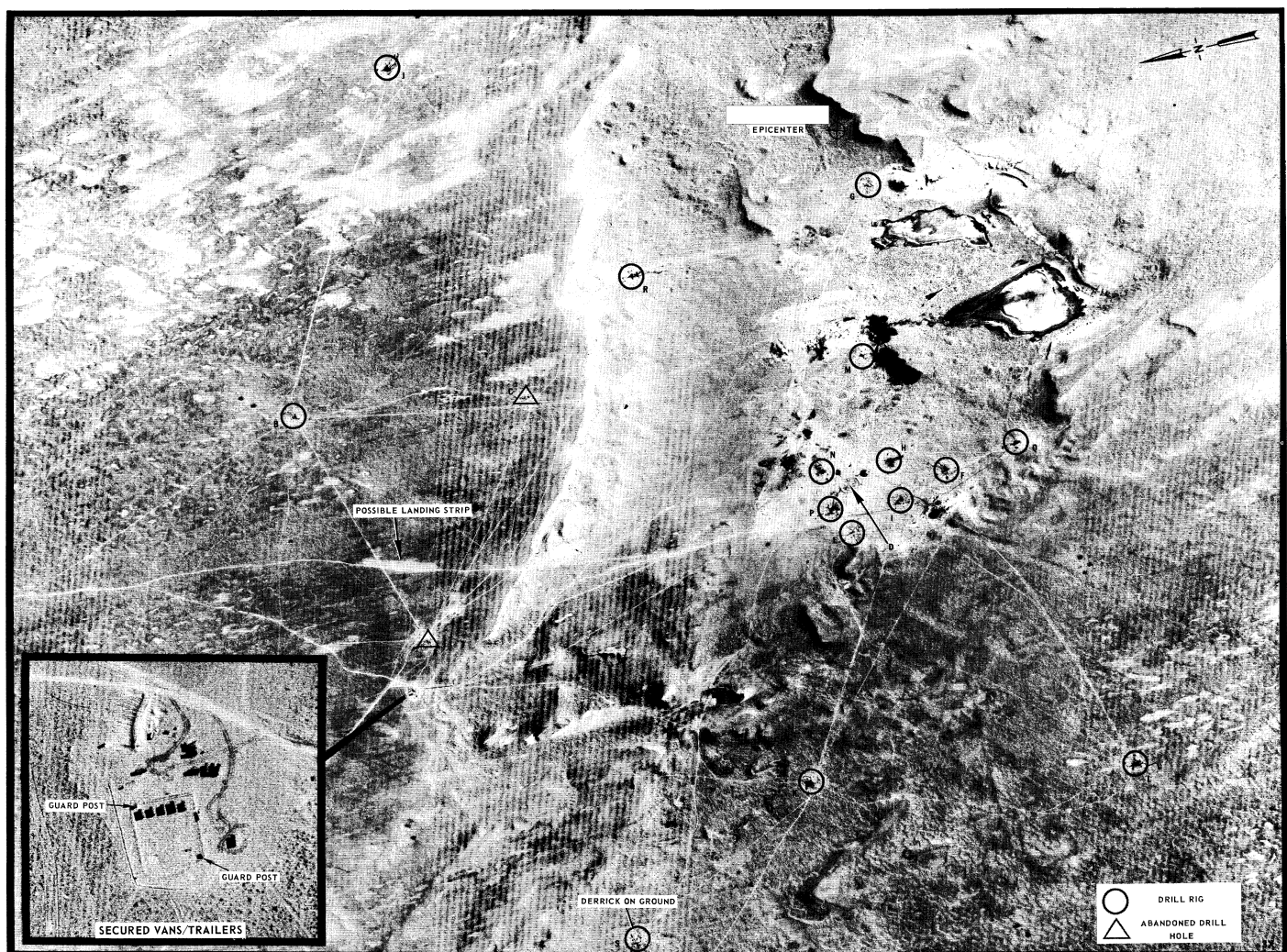


FIGURE 8. POST-EVENT ACTIVITY NEAR THE SEISMIC DISTURBANCE

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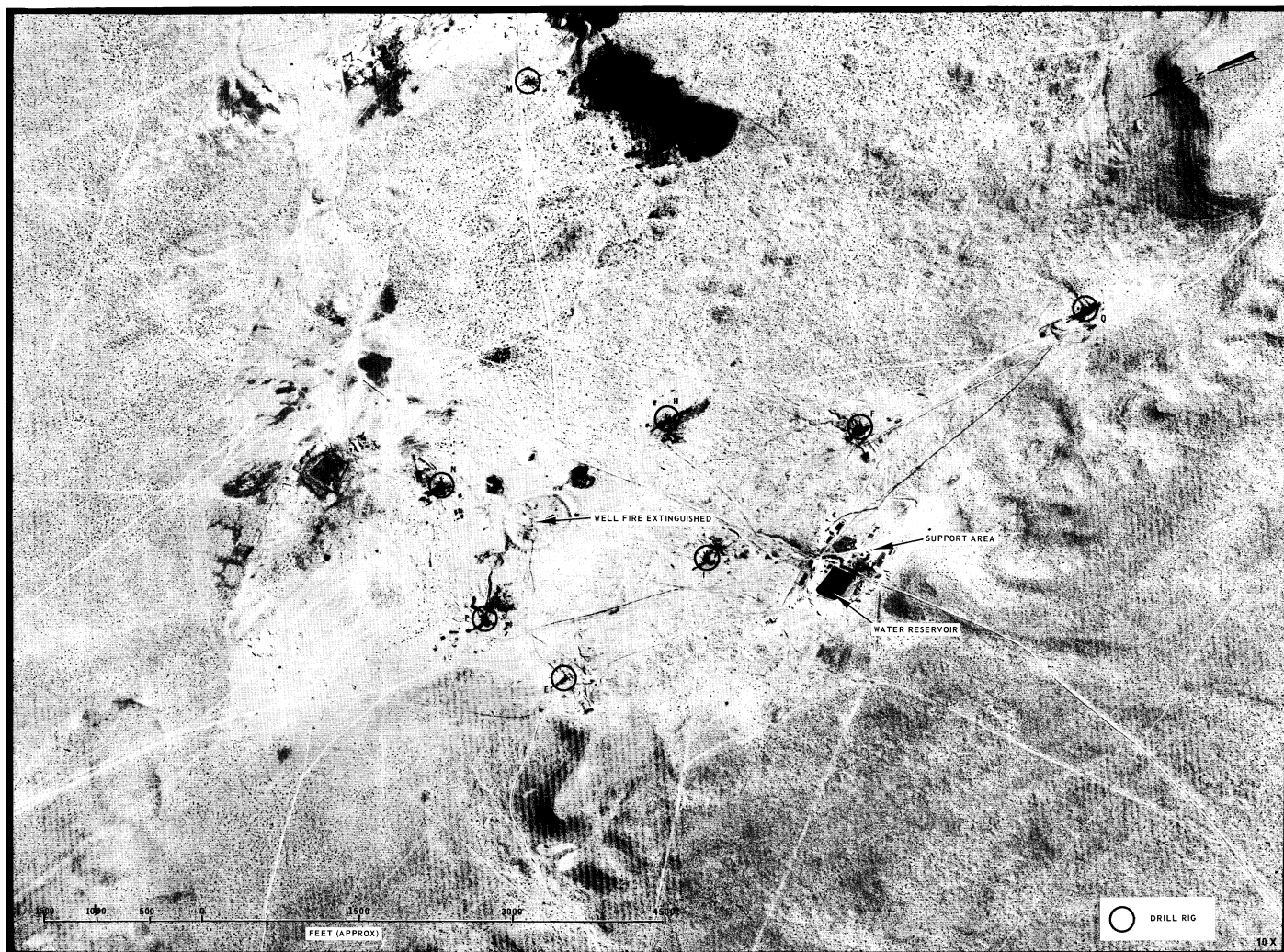


FIGURE 9. POST-EVENT ACTIVITY AT THE SITE OF THE FORMER GAS WELL FIRE

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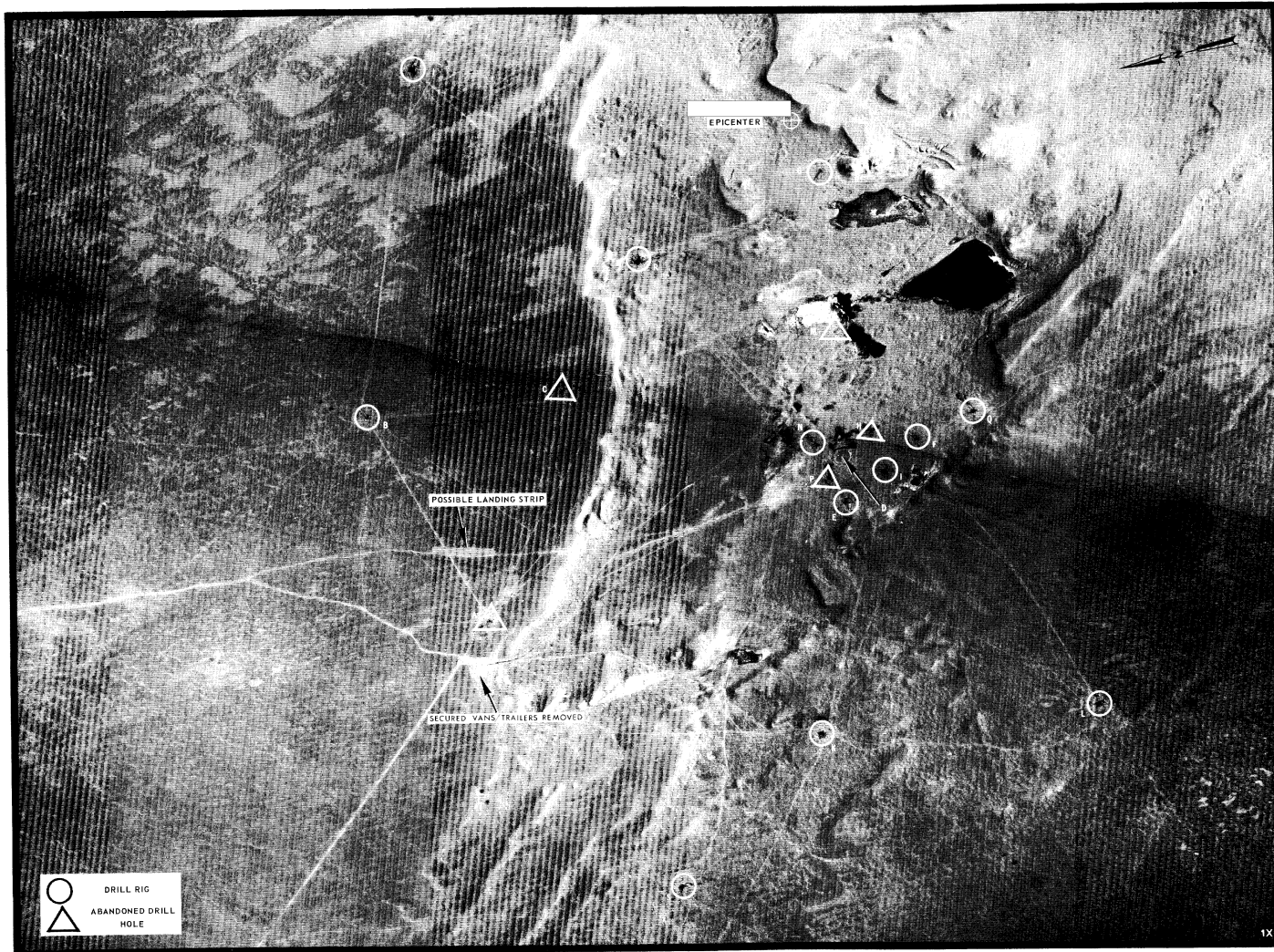
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FIGURE 10. POST-EVENT ACTIVITY NEAR THE [REDACTED] SEISMIC DISTURBANCE [REDACTED]

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FIGURE 11. POST-EVENT ACTIVITY AT THE SITE OF THE FORMER GAS WELL FIRE

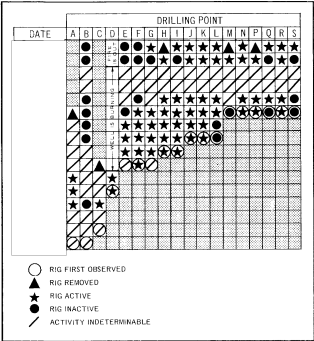


TABLE 1. CHRONOLOGY OF DRILLING ACTIVITY.

DRILLING POINT	WELL FIRE (POINT D)	YANS/TRAILLIS
A	112.0	16.5
B	176.0	92.0
C	105.0	100.0
D	105.0	124.0
E	15.0	145.0
F	11.0	104.0
G	84.0	215.0
H	15.4	170.0
I	16.1	167.0
J	124.0	121.0
K	84.0	125.0
L	125.0	210.0
M	39.5	177.0
N	9.0	117.0
O	10.5	111.0
P	8.4	230.0
Q	91.5	117.0
R	150.0	105.0

TABLE 2. SIGNIFICANT DISTANCES(in hundreds of feet).

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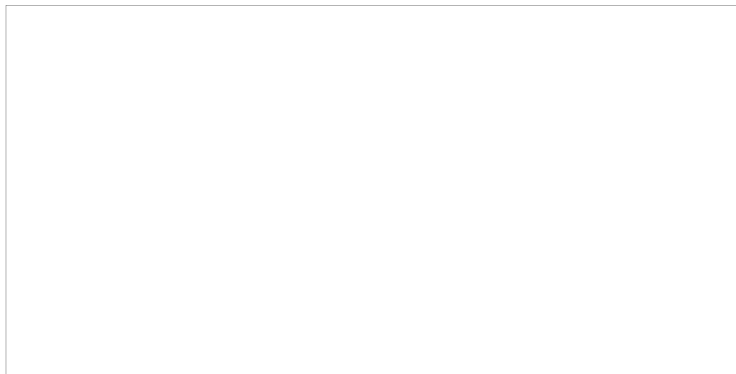
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#### REFERENCES

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#### MAPS AND CHARTS

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AMS. Series DESPA 1, Sheet NJ 41-7, Sayat, USSR, Scale  
1:250,000, ed 1-AMS, November 1962 (Top Secret [redacted])

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AMS. Series DESPA 1, Sheet NJ 41-8, Karshi, USSR, Scale  
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1/ Razvedka i Okhrana Nedr (Exploration and Conservation of Deposits),  
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2/ NPIC [redacted] OAK, Part I, March 1967.  
(Top Secret [redacted])

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